REMARKS/ARGUMENTS

The Examiner is thanked for the review of the application.

Claims 1 - 16 remain in this application. Claims 1, 2, 4, and 6 have been amended. No new matter has been added.

In the Office Action dated April 11, 2006, the Examiner has rejected Claims 1, 4, 5, 14, 15 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641), and further in view of Ouimet et al. (6,078,893).

Regarding Claim 1, the Examiner has stated that "Ouimet '641 discloses: an econometric engine for modeling internal sales as a function of price to create a sales model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal); a financial model engine for modeling costs to create a cost model, (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, (Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system is computer-implemented and in order to create models, a module is necessary in a computerized system); wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity…(Col. 2, lines 5-17, determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity); and an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}]). Ouimet '641 fails to disclose a configuration to receive variable costs and fixed costs, but does disclose a pricing module in col. 4, lines 52-53. However, Ouimet '893 discloses: configured to receive

variable costs and fixed costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing the market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model. Ouimet '641 also does not disclose wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, but does disclose receiving pricing parameters for a plurality of products as inputs in col. 6, lines 29-67. However, Ouimet '893 discloses: wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, also, col. 8, lines 28-38, shows market is broken into well defined groups, w/col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products with the motivation of allowing a particular set of related products to be evaluated, and for preferred prices to be computed from the evaluation. Neither Ouimet '641 nor Ouimet '893 disclose where costing activity includes labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing, but Ouimet '641 does disclose determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity Col. 2, lines 5-17, thereby making the above limitations obvious since labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing are all commonly utilized activities in product development that influence the actual cost for developing the product. It would have

been obvious to one of ordinary skill in the art at the time of the applicant's invention to include labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing in costing activities with the motivation of including factors that will affect the cost of developing a product."

Claim 1 has now been amended to read, in part with pertinent additions emphasized:

"an econometric engine for modeling internal sales as a function of price to create an internal sales model ,wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products**, further wherein said each said set is defined by a user such that each said set is unique to said user** ;"

Support for the amendments can be found in the specification as filed on page 13, lines 11-13. As noted in the previously filed response, neither Ouimet et al. '641, nor Ouimet et al. '893 teach nor suggest modeling internal sales by clustering highly substitutable related products into sets for modeling. Rather, Ouimet '893 generates a demand model for individual products (not product sets) and then uses external market information to correct for noise in the product demand model. (Col 2, lines 10 – 18).

Demand groups are defined in the specification as groups of highly substitutable products. This is different from a group of products as references as used by Ouimet. For example, sodas might be grouped together in a category, but a demand group would further subdividide them into demand groups such as colas (Pepsi, Coke etc), lemon-flavored sodas (7up, Sierra Mist), etc. Since someone preferring a cola is unlikely to change to 7up, a broad soda category as used in Ouimet would not qualify as a demand group consisting of highly substitutable products. Further, these demand groups vary from customer to customer since it depends upon the assortment carried by a retailer, primary competitors of the retailer, etc. This information is input by a user (usually a business customer or retailer) and helps construct the sets of demand groups. The instant invention provides the advantage of relying solely upon internal product sales data to create the sales model.

As a result, the sales model may then be generated to model sales for the group. This provides the advantage of decreasing process time and providing a more facile modeling scheme. (See specification, page 13, line 21 – page 14, line 1). Ouimet '893 does not teach nor suggest creating a related product set sales model. Furthermore, Ouimet et al. does not disclose any structure which is capable of modeling sales for a set of highly substitutable products as disclosed by the instant invention. Known sales models, like the one disclosed in Ouimet et al., model individual product sales. The novel sales model of the instant invention, on the other hand, models group sales.

Neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, base Claim 1, and claims 2, 3, and 14, which are dependent upon Claim 1, are allowable over the cited art.

Regarding Claim 5, the Examiner has stated that "Ouimet '641 discloses: creating an internal sales model for each discrete sets of related products…for a given time period in a given store, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal); for modeling sales of each discrete sets of related products for a given time period…, (Col. 5, lines 24-31, shows a demand model for a promotional activity that was occurring at the time of sale); Ouimet '641 fails to disclose creating a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5. However, Ouimet '893 discloses: creating a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products, (Col. 5, lines 57-64, shows items of products are analyzed according to a given group, also, col. 8, lines 28-38, shows market is broken into well defined groups, w/col. 10, lines 27-37, shows sales of one item can depend on

the sales of other items which lead to the demand for each item in a given group). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products. Ouimet '641 fails to disclose creating a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period, but does disclose the utilization of a demand model to optimize prices. However, Ouimet '893 discloses: creating a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period, (col. 8, lines 9-13, shows demand parameter can depend on the degree to which the relative portion of the sales history is free of noise, where the relative portion is analogous to the fraction of internal sales, lines 35-37, [maximize market share by using demand model by breaking up market into smaller well-defined groups]). Ouimet '893 discloses this limitation in analogous art for the purpose of showing that a fraction or portion of the market share can be modeled and maximized by using the demand model. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period with the motivation of determining a fraction or portion of market shares according to categories."

Claim 4 has now been amended to read, in pertinent part:

"creating an internal sales model ,wherein said internal sales model clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products **, further wherein said each said set is defined by a user such that each said set is unique to said user** ;"

As discussed above, neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the

internal market share model disclosed by the instant invention. Hence, base Claim 4, and claims 5 and 15, which depend upon Claim 4, is allowable over the cited art.

In the same Office Action the Examiner also rejected Claims 2, 3 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (US 6,094,641) and further in view of Ouimet et al. (6,078,893), and further in view of Ouimet et al. (US 6,308,162).

Regarding Claim 2, the Examiner has stated that "Ouimet '641 discloses: a price calculator connected to…the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on…, the sales model, and the cost model, (Col. 8, lines 18-20, [shows calculating], col. 5, lines 50-55 and 60-65, [see equations listed where calculating is done via the equations]); Ouimet '641 fails to disclose further wherein said price limiting strategic considerations constrain the preferred set of prices to fall within limits conforming to business strategy, but does disclose determining a preferred set of prices as disclosed above. However, Ouimet '893 discloses: further wherein said rule parameters constrain the preferred set of prices to fall within limits conforming to business strategy, (Col. 1, lines 32-57, shows use of rule-based approach, and using a model-based approach to affect pricing where tuning of a demand model is done for fluctuations), Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that rules are implemented when determining prices. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use rule parameters to constrain the preferred set of prices to fall within limits conforming to business strategy with the motivation of showing that prices can be determined according to a set of rules. Neither Ouimet '641 nor Ouimet '893 disclose a strategy implementation module, which stores a plurality of price limiting strategic considerations, but Ouimet '641 does disclose a routine in col. 6, lines 6-8, where rules must be present in order to successfully process the routine. However, Ouimet '162 discloses the following: a strategy implementation module, which stores a plurality of price limiting strategic considerations, (col. 1, lines 30-34, [rule based approach], w/col. 4, lines 2-15, shows strategic constraint used to set prices, or col. 5, lines 65-col. 6, line 11, shows when a retailer would like his or her prices to be perceived as being lower than other retailers, this 'price image' is an example of a strategic constraint). Ouimet '162 discloses this limitation in an analogous art for the purpose of showing

that rules are used in an approach to optimize models, and strategic constraints are used to limit prices as being lower than other retailers. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize a strategy implementation module, which stores a plurality of price limiting strategic considerations with the motivation of going through the process of optimizing models to determine prices in a logical manner, and to strategically set prices."

Claim 2 has now been amended to read, in relevant part:

"a price calculator connected to the strategy implementation module, the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on price limiting strategic considerations, the sales model, and the cost model, further wherein said price limiting strategic considerations constrain the preferred set of prices to fall within limits conforming to business strategy**, wherein said strategy implementation module is a natural language based rules engine which translates said price limiting strategic considerations into rules used by said price calculator**."

Support for the amendment can be found on pages 103 – 107 of the specification as filed. Ouimet et al. '162 (col. 1, lines 30 – 47) mentions "rule-based" pricing systems to contrast them with model based pricing systems. The Ouimet '162 rule-based systems do not optimize the decision to maximize an objective such as profit or revenue, but instead activate a set of pre-defined rules to generate an action. On the other hand, the instant invention uses a natural-language based rules engine to translate business strategy into a set of rules that can be enforced by the optimization engine (in this case, a pricing calculator).

The novel strategy implementation module of the instant invention includes a mechanism whereby natural language based price limiting strategic considerations are included in the optimization. This ensures that the preferred set of prices conforms to the business strategy of the user. This capability significantly enhances model based pricing systems by making their recommendations practical and actionable. Rule based systems, such as those taught by the prior

art, specify a recipe for responding to specific stimuli like competitor price changes etc; they specify rules of action rather than rules that define strategy.

The Examiner has also rejected Claims 6-13, 16, under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641) and further in view of Ouimet et al. (US 6,078,893), and further in view of Hartman et al. (6,725,208).

Regarding Claim 6, the Examiner has stated that "Neither Ouimet et al. '641, nor Ouimet '893 disclose based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, but Ouimet et al. '641 does disclose utilizing demand models to optimize prices in the abstract, lines 1-5. However, Hartman et al. discloses: based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, (Abstract, lines 1-4, shows Bayesian modeling used for optimization, and col. 8, lines 62- col. 9, line 3, utilizing the weighted average of multiple models). Hartman et al. discloses this limitation in an analogous art for the purpose of show in that Bayesian modeling can be used to determine optimal prices. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize Bayesian modeling wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, with the motivation of processing a particular optimization technique to determine prices."

Claim 6 has now been amended to read, in pertinent part:
"an econometric engine for modeling internal sales as a function of price to create an internal sales model based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine

clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products**, further wherein said each said set is defined by a user such that each said set is unique to said user** ;"

As noted above in reference to Claim 1, support for the amendments can be found in the specification as filed on page 60, lines 5 – 14. As amended, Claim 6 now more distinctly claims the novel aspect of the instant invention. As discussed above, neither Ouimet et al. '641, nor Ouimet et al. '893 teach nor suggest modeling internal sales by clustering highly substitutable related products into sets for modeling. Rather, Ouimet '893 generates a demand model for individual products (not product sets) and then uses external market information to correct for noise in the product demand model. (Col 2, lines 10 – 18). The instant invention provides the advantage of relying solely upon internal product sales data to create the sales model.

Furthermore, demand groups are defined in the instant invention as groups of highly substitutable products. This is different from a group of products as references as used by Ouimet. For example, sodas might be grouped together in a category, but a demand group would further subdividide them into demand groups such as colas (Pepsi, Coke etc), lemon-flavored sodas (7up, Sierra Mist), etc. Since someone preferring a cola is unlikely to change to 7up, a broad soda category as used in Ouimet would not qualify as a demand group consisting of highly substitutable products. Further, these demand groups vary from customer to customer since it depends upon the assortment carried by a retailer, primary competitors of the retailer, etc. This information is input by a user (usually a business customer or retailer) and helps construct the sets of demand groups. The instant invention provides the advantage of relying solely upon internal product sales data to create the sales model.

The instant invention generates a sales model for the entire product set. A set of related products is defined to give a group of highly substitutable products (or items). (Specification, page 13, lines 11-13). The sales model is then generated to model sales for the group. This provides the advantage of decreasing process time and providing a more facile modeling scheme.

(See specification, page 13, line 21 – page 14, line 1). Ouimet '893 does not teach nor suggest creating a related product set sales model. Furthermore, Ouimet et al. does not disclose any structure which is capable of modeling sales for a set of highly substitutable products as disclosed by the instant invention. Known sales models, like the one disclosed in Ouimet et al., model individual product sales. The novel sales model of the instant invention, on the other hand, models group sales.

Neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, base Claim 6, and claims 7 - 13, and 16, which are dependent upon Claim 6, are allowable over the cited art.

In sum, base claims 1, 4, and 6 have been amended and are now believed to be allowable. Dependent claim 2 has also been amended and is now believed to be allowable. Dependent claims 3, 5, and 7 – 16 which depend therefrom are also believed to be allowable as being dependent from their respective patentable parent claims for at least the same reasons. Hence, Examiner's rejection of dependent Claims 3, 5, and 7 – 16 are rendered moot in view of the amendment to independent Claims 1, 4, and 6. No new claims have been added.

Applicants believe that all pending claims 1 - 16 are now allowable over the cited art and are also in allowable form and respectfully request a Notice of Allowance for this application from the Examiner. Applicants also petition for a two-month extension of time. The commissioner is authorized to charge a two-month extension of time fee and any additional fees that may be due to our Deposit Account No. 50-2766 (Order No. DEM1P001). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at telephone number 925-570-8198.

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